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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No.	
First Inventor or Application Identifier	Meyers
Title	TEE BAFFLE FOR USE AT INLET OR OUTLET OF SEPTIC AND...
Express Mail Label No.	EL334183354US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents
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- ☒ Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
- ☒ Specification [Total Pages 27]
(preferred arrangement set forth below)
 - Descriptive title of the invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to Microfiche Appendix
 - Background of the invention
 - Brief Summary of the invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
- ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 5]
- Oath or Declaration [Total Pages 4]
 - ☒ Newly executed (original or copy)
 - ☐ Copy from a prior application (37 C.F.R. § 1.63(d))
(for continuation/divisional with Box 17 completed)
[Note Box 5 below]
 - ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).
(useable if Box 4b is checked)
- ☐ Incorporation By Reference (useable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered to be part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

- ☐ Microfiche Computer Program (Appendix)
- Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
 - ☐ Computer Readable Copy
 - ☐ Paper Copy (identical to computer copy)
 - ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

- ☒ Assignment Papers (cover sheet & document(s))
- ☐ 37 C.F.R. § 3.73(b) Statement (when there is an assignee) ☒ Power of Attorney
- ☐ English Translation Document (if applicable)
- ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
- ☐ Preliminary Amendment
- ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
- ☒ Small Entity Statement(s) ☐ Statement filed in prior application, Status still proper and desired (PTO/SB/09-12)
- ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
- ☒ Other: General Authorization Under 37 C.F.R. § 1.136(a)(3)

* NOTE FOR ITEMS 1 & 14: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEE, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.127), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.128).

17. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:
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18. CORRESPONDENCE ADDRESS

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Applicant: Theodore W. Meyers) "Express Mail" mailing label number EL334183354US
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<u>FOR</u>	<u>NUMBER FILED</u>	<u>NUMBER EXTRA</u>	<u>RATE</u>	<u>CALCULATIONS</u>
TOTAL CLAIMS	18 - 20 =	0	X \$18 = \$	0.00
INDEPENDENT CLAIMS	3 - 3 =	0	X \$78 = \$	0.00
MULTIPLE DEPENDANT CLAIMS (if applicable)				
			BASIC FEE	\$ 690.00
Total of above Calculations = \$				690.00
Reduction by 50% for filing by small entity				- 345.00
TOTAL = \$				345.00

The Commissioner is hereby authorized to charge payment of the following fees associated with this communication, or that may become due during the pendency of this application, or credit any overpayment of any such fees to Deposit Account No. 20-1111. A duplicate copy of this fee transmittal sheet is enclosed.

- ☒ Any additional filing fees required under 37 CFR § 1.16.
- ☒ Any patent application processing fees under 37 CFR § 1.17.
- ☒ Any filing fees under 37 CFR § 1.16 for presentation of extra claims.

Respectfully submitted,

Date: August 31, 2000

Jeremy R. Kriegel
Jeremy R. Kriegel
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PATENT
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Theodore W. Meyers)
For: TEE BAFFLE FOR USE AT INLET)
OR OUTLET OF SEPTIC AND OTHER)
ON-SITE WASTE DISPOSAL SYSTEMS)



GENERAL AUTHORIZATION UNDER 37 CFR 1.136(a)(3)

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Christa Noble

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Christa Noble
(Signature of person mailing paper or fee)

The Applicant hereby requests and authorizes that any concurrent or future reply concerning this application requiring a petition for an extension of time under 37 CFR 1.136 for its timely submission be treated as incorporating a petition for extension of time for the appropriate length of time. The Applicant further authorizes that any required extension of time fees, or any other fees required under 37 CFR 1.17, may be charged, or overpayments of such fees may be credited, to Deposit Account No. 20-1111.

Respectfully submitted,

Jeremy R. Kriegel
Jeremy R. Kriegel
Reg. No. 39,257

Dated: August 31, 2000

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Chicago, Illinois 60606-4002
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Applicant or Patentee: Theodore W. Meyers
Attorney's Serial or Patent No.: _____ Docket No.: _____
Filed or Issued: _____
For: TEE BAFFLE FOR USE AT INLET OR OUTLET OF SEPTIC AND OTHER
ON-SITE WASTE DISPOSAL SYSTEMS

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) and 1.27(c)) - SMALL BUSINESS CONCERN**

I hereby declare that I am:

_____ the owner of the small business concern identified below:
X an official of the small business concern empowered to act
on behalf of the concern identified below:

NAME OF CONCERN: Tuf-Tite, Inc.
ADDRESS OF CONCERN: 1125 North Old Rand Road
Wauconda, Illinois 60084

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled:

**TEE BAFFLE FOR USE AT INLET OR OUTLET OF SEPTIC
AND OTHER ON-SITE WASTE DISPOSAL SYSTEMS**

by inventor(s) Theodore W. Meyers
described in

X the specification filed herewith
_____ application serial no. _____, filed _____.
_____ patent no. _____, issued _____.

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who could not qualify as a small business concern under 37 CFR

1.9(d) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27).

NAME: Tuf-Tite, Inc.
ADDRESS: 1125 North Old Rand Road, Wauconda, Illinois 60084
Individual X Small Business Concern Nonprofit Organization

NAME: _____
ADDRESS: _____
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I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

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NAME OF PERSON SIGNING Theodore W. Meyers
TITLE OF PERSON OTHER THAN OWNER President
ADDRESS OF PERSON SIGNING 1125 North Old Rand Road
Wauconda, Illinois 60084

SIGNATURE Theodore W. Meyers DATE 8-26-00

5

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APPLICATION FOR

15 UNITED STATES LETTERS PATENT

FOR

20 TEE BAFFLE FOR USE AT INLET OR
OUTLET OF SEPTIC AND OTHER
25 ON-SITE WASTE DISPOSAL SYSTEMS

30 "Express Mail" mailing label number EL334183354US
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Christa Noble

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Christa Noble
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35 Inventor: Theodore Meyers

TEE Baffle FOR USE AT INLET OR
OUTLET OF SEPTIC AND OTHER
ON-SITE WASTE DISPOSAL SYSTEMS

5 BACKGROUND

Field of the Invention

The present invention relates generally to pipe
10 fittings and, more particularly, to a tee provided at the
inlet and/or outlet of a septic tank and other on-site waste
disposal systems. The tee can be used as a housing for an
effluent filter at the outlet of a septic tank, and can also
be used without an effluent filter, in place of conventional
15 pipe tees at the inlet of a septic tank.

Background

Most septic systems and other on-site waste
disposal systems utilize pipe couplings, known in the art as
20 so-called tees, for directing and controlling flow of sewage
into, or effluent out of, the tank of the disposal system.
Older concrete septic systems utilized cast-in concrete
baffles at the inlet and outlet of the system. A drawback
of concrete baffles is that the exposed portion thereof,
25 i.e. that portion of the concrete baffles which is above the
level of the scum layer within the septic tank, rapidly
deteriorates. This is understood to be a result of exposure
to gases within the tank. A recent trend to overcome this
drawback has been the use of plastic tees to replace
30 concrete baffles at both the inlet and outlet of the septic

tank. Such a tee, also called a tee baffle, is often provided at the outlet of the disposal system to serve as a housing for an effluent filter, whether as a so-called multi-pass filter, as described in co-pending U.S. Patent Application No. 09/338,371, or as a so-called single-pass filter, as typified by U.S. Patent No. 5,382,357.

Alternatively, such a tee can be used at the inlet end of the disposal system, without a filter, so as to direct sewage to the bottom of the septic tank or other on-site waste collection tank. The tee baffle can have a right-angle shape, or more preferably, be in the form of a sanitary tee-type baffle, in which case it has an arching, or "sweep" design portion at the inlet/outlet port.

Typically, installers of septic tanks and other on-site waste disposal systems use standard tees or sweep tees manufactured primarily for use in plumbing applications, such as for pipe joints or couplings. As a result, such standard tees and sweep tees are not universally adequate for serving as the housing for an effluent filter inside the septic tank. They are relatively heavy, and relatively expensive for use in septic systems.

Another drawback of conventional tees is the difficulty and expense of molding such tees. Due to the necessity of having three openings and a hollow interior, complex molds are necessary to achieve a molded one-piece tee. Most injection molding techniques presently used to manufacture pipe tees leave undesirable interior seams and

flash, which tend to impede insertion of effluent filters into the pipe tees, and adversely effect operation and sealing of the effluent filters and pipe tees. Also, because grease, fats, oils, hair, lint, and other floatables in effluent tend to collect at rough surfaces along the interior wall of a conventional pipe tee to thereby cause flow blockage, such seams or flash provide surfaces where such undesired waste products are likely to be deposited. Over time, solid and semi-solid waste in the effluent will build up, and slime will grow at such seams or flash, the combination eventually prematurely plugging the pipe tee. This undesirable plugging also detrimentally effects the needed sealing surfaces for the annular seals used with many prior art single-pass filters.

A recognized problem with conventional pipe tees used in on-site waste systems is that, once they start to become plugged, it is more difficult for the effluent to make its way through the pipe tee, through an effluent filter held therein, and out the outlet of the septic tank. Eventually, due to such plugging, among other reasons, the effluent in the septic tank rises to a level higher than the level of effluent in the pipe tee. This fluid level differential causes a build up of pressure, or head pressure, that is exerted on and within the open base of the pipe tee, i.e. in the region of the bottom of the effluent filter. In many cases, these head pressures undesirably cause the effluent filters to literally pop up out of the

pipe tees. It would therefore be desirable for an effluent filter housing to not only help prevent premature plugging, but also include means for preventing the effluent filter from undesirably popping out of the tee housing.

5 Since conventional pipe tees are formed as relatively short-length plumbing couplings, they are not of sufficient length to encase or house any of the currently available effluent filters. Most known commercial single-pass effluent filters, as well as the multi-pass effluent
10 filter that is the subject of co-owned U.S. patent application no. 09/338,371, require a generally cylindrical housing extending to cover much, if not all, of the extended length of the effluent filter. This is required in order to provide regions for filtered effluent to eventually reach
15 the outlet port of the tee, and thereby exit the tank portion of the system, all without again mixing with unfiltered sewage.

Such generally cylindrical filter housings are usually provided by way of a length of PVC pipe cut down to
20 fit one end of the available plumbing tees, and of sufficient length to cover the sealing gasket used with many of the known single-pass effluent filters. The gasket provides a sealing membrane between the effluent filter and the inner wall of the length of pipe, to substantially
25 isolate a region therebetween to receive filtered effluent. Because commercially available PVC pipe is widely sold in lengths on the order of no shorter than 10', it is not

uncommon for the installer to cut off a relatively short length of pipe, e.g. 12", from a 10' pipe section for coupling with a standard plumbing tee to thus create the needed cylindrical housing for the effluent filter.

5 It is also recognized that health-related codes and regulations in some jurisdictions, i.e. municipalities, counties, and states, require the elongated portion of pipe tees used in septic tanks to extend lower, i.e. deeper into the clear zone of the effluent in the septic tank, than is
10 minimally necessary for the elongated portion of the tee to cover the effluent filter. It would be desirable, for use in such jurisdictions, and in other instances where longer tees are considered beneficial, such as for use in relatively deeper septic tanks, to easily adapt a pipe tee
15 by lengthening the elongated portion thereof. In conventional tees, one would likely cut the length of pipe to its final desired length before connecting the pipe to the pipe tee. For example, when so-called schedule 40 pipe is used for extending a schedule 40 tee used in a septic
20 tank to house an effluent filter; the schedule 40 pipe has a wall thickness of about 0.250". An extendable pipe tee that had a reduced wall thickness would therefore reduce the material needed for the effluent filter housing, yet still could be adaptable for use where longer pipe tees were
25 desired.

One reason that such thick-walled pipe is used in conventional plumbing pipe tees is that such pipe must

satisfy pressure-rated fitting requirements for use in non-septic tank locations, non-drainage locations, and under-floor locations, as well as in other applications where the pipe tees are subjected to high external pressures.

5 Furthermore, those thick-walled pipes may be subjected to, and are made to withstand, high internal pressures, which are simply not encountered in septic tank and similar drainage systems. Because pipe tees used solely at the inlets and outlets of septic tanks and other on-site waste
10 drainage systems are not used in under-floor applications, they are also not subjected to the high external pressures that typical plumbing tees must withstand. Thus, in septic tanks and other on-site drainage systems, pipe tees (whether installed at the inlet or outlet end) could be made in a way
15 that substantially saves on molding materials and manufacturing costs, while still meeting, and even exceeding, the much lower internal and external pressure demands the pipe tees would encounter.

It would be desirable for pipe tees used in septic
20 tanks and other on-site waste drainage systems to be made substantially thinner-walled than conventional pipe tees, yet still maintain sufficient structural integrity to withstand some forces, such as internal forces exerted during insertion or removal of effluent filters into or from
25 the pipe tee. It would further be desirable for such a thinner-walled pipe tee to have a spigot or pipe-size end at the lowermost end thereof that has an outside dimension that

is compatible with the inside of the bell end of an SDR 35 pipe or the hub of a sewer and drain SDR-35 fitting, so that in septic tanks, the pipe tee could still be connected to a bell end of a thin-walled pipe, as well as to the hub of an SDR-35 fitting (also known in the art as a sewer and drain fitting), ASTM 3034, ASTM 2729 pipe or bell. It is preferable to still use such thicker walled pipe as connections to the inlet and outlet ends of a septic system, but the present invention is directed toward avoiding the expense of such thicker walled tubing for the tee baffle on the interior of the septic tank, where such internal and external pressures are not encountered.

It is an object of the present invention to provide a tee suitable for use at the inlet or outlet of a septic tank or other on-site waste system that is relatively inexpensive.

It is another object of the present invention to provide a tee baffle with its own integral generally cylindrical portion that can provide a housing for many of the commonly available effluent filters having generally cylindrical profiles. Even at the outlets of septic tanks located in jurisdictions where effluent filters are not presently required or commonly used, it would still be desirable to use such tee baffles, because it may eventually become desirable to add an effluent filter at a later date, to meet later code requirements. The tee baffle of the present invention should therefore provide a way to later

easily add an effluent filter at the outlet without having to then retrofit the septic tank with a special housing for the effluent filter.

It is a further object to provide specific
5 structure for a tee baffle that promotes efficient operation of a given known effluent filter, whether of the single-pass or multi-pass type, yet does not interfere with the successful use of the tee with other known circular-shaped effluent filters. The manner in which these and other
10 objects of the invention are achieved will become clear in the following Summary of the Invention, the drawing figures, and the Detailed Description of the Preferred Embodiment.

15 Summary of the Invention

A preferably sanitary tee baffle, i.e., a tee having an arching sweep portion, is provided that is molded in one piece in one embodiment, or alternatively, in two distinct halves which are then mated with and rigidly
20 fastened to one another, such that there are two seams longitudinally bisecting the resultant sanitary tee baffle. For reasons of brevity, the terms tee baffle and tee are used synonymously herein. Each of the mating halves of the sanitary tee baffle is in the shape of a lower case r, with
25 an elongated main body portion extending substantially below the sweeping portion. In this manner, the sanitary tee baffle itself is of sufficient length to serve as a housing

for an effluent filter, without the need for securement of additional lengths of pipe. The sanitary tee baffle of the present invention, whether formed of one or two pieces, is of reduced wall thickness over most of its length, as compared with conventional schedule 40 pipes and pipe tees, which generally have a wall thickness of about 0.250". The reduced wall thickness, on the order of between 0.075" and 0.100", and preferably about 0.090", means a substantial savings in material and molding expense.

The two-piece sanitary tee baffle has a total of six mating edges, which extend between an inner slanted shoulder of the hub near the top of the sanitary tee baffle, an inlet/outlet port, and a lowermost end of the sanitary tee baffle. The inner slanted shoulder of the hub provides a stop for a cap of the effluent filter. The mating edges of one of the mating halves are provided with tongues extending substantially the length of each respective edge, and projecting perpendicularly from such respective edge. The tongues are received in grooves, respectively provided in each of the corresponding mating edges of the other mating half of the sanitary tee. Each of the mating edges are provided with smooth portions that extend outwardly of the tongues and grooves. The smooth portions provide additional surface area for solvent welding of the two mating halves, as well as providing elongated ridges on the outside of the sanitary tee for clamping the mating halves to one another during curing of the solvent. Preferably,

there is a clearance fit, both width-wise and depth-wise, between the tongues and the grooves, so as to provide sufficient room for the solvent and to facilitate assembly.

The sanitary tee is also provided with one or more
5 integral annular strengthening ribs on the outer wall to provide reinforcement to the otherwise thin walled thicknesses. The lower region of the tee includes a cylindrical portion that tapers inwardly down to a smaller diameter lowermost end of the tee. This lowermost end
10 advantageously can be used to couple with the bell end of a length of additional pipe to further lengthen the sanitary tee, if needed. This would be advantageous because the thinner-walled pipe achieves what conventionally required Schedule 40 pipe. The inner wall of the lowermost end also
15 provides an improved seal surface for the annular gaskets provided on many commercial single-pass type effluent filters.

The more preferred one piece tee baffle of the present invention is provided with a plurality of annular
20 rigidifying ribs in the lower portion thereof, such lower portion acting as a hub-receiving end. These and other aspects of the invention are further described in the following detailed description of the preferred embodiment and the drawings.

Description of the Drawings

FIG. 1 is a front perspective view, partially cut away, of a two piece tee baffle of the present invention in combination with a multi-pass effluent filter, an outlet
5 port of a septic tank, and a drainage pipe leading from the two piece tee through the outlet port of the septic tank;

FIG. 2 is a front perspective view of a two piece tee baffle of the present invention and a reducer bushing;

FIG. 3 is a partially exploded view of the two piece
10 tee baffle shown in FIG. 2;

FIG. 4 is an enlarged view of a portion of the joint along a side edge of each of the halves of the two piece tee baffle shown in FIG. 3;

FIG. 5 is a cross-sectional view of the joint between
15 the side edges of each of the halves of the two piece tee baffle, taken along lines 5-5 of FIG. 2;

FIG. 5A is an enlarged cross-sectional view of the joint between two of the side edges of the halves of the two piece tee baffle.

20 FIG. 6 is a front perspective view, partially broken away, of the two piece tee baffle of the present invention in combination with a single-pass effluent filter, an outlet port of a septic tank, and a drainage pipe leading from the two piece tee through the outlet port of the septic tank;

25 FIG. 7 is an enlarged view, taken along line 7 of FIG. 6, showing inwardly-directed semi-circular tabs, by which

the sealing gasket of a single-pass effluent filter engages locking rims of the tee baffle;

FIG. 8 is an enlarged view showing a first alternate type of inwardly-directed tabs that can be used to lockingly engage the sealing gasket of a single-pass effluent filter;

FIG. 9 shows a second alternate type of inwardly-directed tab, in the form of an inwardly-directed annular rib that can be used to lockingly engage the sealing gasket of a single-pass effluent filter;

FIG. 10 is a perspective view of the top of an effluent filter and a portion of the inner wall of the tee baffle of the present invention, showing means for locking the cap of the effluent filter within the tee baffle;

FIG. 11 is a top view of the effluent filter and tee baffle shown in FIG. 10, with the effluent filter locked in position within the tee baffle;

FIG. 12 is a front perspective view of a preferred one piece tee baffle of the present invention, and a reducer bushing;

FIG. 13 is a cross-sectional view, taken along lines 13-13 of FIG. 12; and

FIG. 14 is a partially exploded view of the one piece tee baffle shown in FIG. 12, wherein the one piece tee baffle has been bisected along its vertical axis.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A sanitary tee 10 of the present invention is used at an outlet opening 12 of a septic tank 14, and can serve

as a housing for an effluent filter 16, as shown in FIG. 1
as a multi-pass type effluent filter. Before exiting the
septic tank 14 through a drainage pipe 20, effluent passes
into a lowermost end 22 of the sanitary tee 10. The
5 effluent then is filtered through the effluent filter 16
substantially occupying the hollow space in an elongated
main body portion 24 of the sanitary tee 10. The cap 26 of
the effluent filter 16 rests on a tapered rim 28, or inner
slanted shoulder, at the intersection of the elongated main
10 body portion 24 and a bell-shaped upper end or hub 30 of the
sanitary tee 10.

The hub 30 is preferably in the form of a ring
that is open at the top to allow for access to the handle 32
of the effluent filter 16, provided on a top side of the cap
28. The sanitary tee 10 further includes an arching sweep
15 portion 34 that defines an opening in communication with the
opening in the elongated main body portion 24, to direct
filtered effluent out through a ring-shaped outlet port 36.
When used at the inlet of a septic tank, the sweep portion
20 34 instead directs sewerage down into the elongated main
body portion 24, and toward the bottom of the septic tank.
The drainage pipe 20 is received in the inlet/outlet port 36
of the sanitary tee 10 to drain filtered effluent through
the outlet opening 12 of the septic tank 14.

25 It should also be noted that the hub 30 may, in
certain instances, not extend high enough above the
inlet/outlet port 36 to satisfy some regulatory

requirements. In such cases, it is helpful that the hub can be extended by simply frictionally fitting a smaller diameter pipe segment, such as SDR 35 (ASTM 3034) 4" pipe or ASTM 2729 4" pipe, of sufficient length to meet such regulations, or local customs or standards. Alternatively, a bell end or coupling (also not shown) could be secured, e.g. glued, over the outside of hub 30, and a suitable riser pipe (not shown) would fit into such a coupling. The coupling would have a sufficient inner diameter to accommodate the outer diameter of hub 30, and preferably, the riser pipe added to the coupling has an inner diameter at least as wide as the inner diameter of the hub 30, whereby there is sufficient clearance provided for access to, and changing of, effluent filters 16.

The sanitary tee 10 is formed in this embodiment in two parts, so that it comprises a first mating half 38 and a second mating half 40, as shown in FIG. 3. Each of the first and second mating halves 38, 40, is generally r-shaped. There are a total of six mating edges 42, 44, 46, 48, 50, 52, used to secure the mating halves 38, 40 to one another. In order to facilitate secure interconnection between the two mating halves 38, 40, a tongue-and-groove fitting is provided along substantially the entire length of the mating edges 42, 44, 46, 48, 50, 52. To ensure proper fitting, the two mating halves 38, 40 can be simultaneously molded, and allowed to cool under identical ambient conditions. A solvent welding plastic sealant or glue is

preferably applied into the grooves 56 in the mating halves of the tee baffle prior to joining the two halves together. The sealant, such as PVC plastic pipe cement, available from IPS of Gardena, California under the trade name "Weld-On",
5 helps to ensure a liquid-tight seal.

In order to provide an easy-to-assemble tee baffle, the tongue-and-groove fitting is preferably a clearance fit. In the preferred embodiment, the raised tongues 54 extending along each edge 44, 48, 52 of the
10 second mating half 40 preferably has a width of about 0.045", while the respective grooves 56 along the edges 42, 46, 50 of the first mating half 38 preferably each has a width of about 0.075". The grooves 56 are also preferably deeper, by about 0.008-0.010", than the height of the raised
15 tongues 54. The clearance fit of the tongue-and-groove connection facilitates assembly, and also provides adequate room inside the plastic weld joint to receive a sufficient quantity of the sealant to ensure a secure bond. The pairs of mating edges 24, 44, 46, 48, 50, 52 cooperate to form
20 elongated strengthening ribs 47 along the vertical axis of the tee baffle 10. Advantageously, each edge 42-52 of the two mating halves is provided with a flat elongated extension of the edge outwardly of the tongue 54 and outwardly of the groove 56, as shown in FIG. 4. The flat
25 extension portion 58, preferably having a thickness of about 0.130", provides a pair of smooth, sealant-receiving

surfaces to extend the region, i.e. extent of interconnection of the mating halves 38, 40.

The elongated extensions 58 of the edges 42-52 also provide locations on the exterior of the tee baffle for clamping the mating halves to one another during assembly, i.e. primarily during curing of the sealant. The elongated extensions 58 of the seam result in an effective gluing surface for each edge of the two mating halves 38, 40 that is preferably about 0.250" in width dimension. Thus, while most of the wall area of the assembled tee 10 of the present invention advantageously has a reduced wall thickness, i.e. preferably on the order of 0.075"-0.100", and most preferably approximately 0.090", the seams still have an increased wall thickness more commensurate with the wall thickness of traditional pipe tees. As a result, the connecting seams of the sanitary tee 10, which might otherwise be considered weak portions of the tee, instead have strength characteristics similar to conventional pipe tees.

To even further increase the strength of the thin-walled sanitary tee 10 of the present invention, annular ribs 60, 62 are provided at one or more locations along the elongated main body portion 24 of the present sanitary tee 10. These annular ribs 60, 62 are areas of increased wall thickness that advantageously allow for a reduced wall thickness tee to still exhibit high strength characteristics, and in particular, to exhibit strength that

is more than adequate for use in septic tanks and other non-pressurized on-site drainage applications.

Advantageously, once connected, the two mating halves 38, 40 of the sanitary tee 10 define a generally cylindrical hollow opening. When the two piece tee baffle is placed at the inlet of a septic tank, no effluent filter is used. Instead, the tee baffle serves the purpose of directing sewage toward the bottom of the septic tank 14, and prevents any rush of incoming sewage from creating unnecessary waves in the septic tank 14.

However, when used to receive one of a variety of commercially available effluent filters 16, 18 having cylindrical profiles or cylindrical footprints, the two piece sanitary tee 10 is then used as a filter receptacle at the outlet of the septic tank 14. Then, when an effluent filter 16, 18 (whether of the single-pass type, as in FIG. 7, or of the multi-pass type, as in FIG. 1) is placed therein, the effluent filter 16, 18 directs unfiltered effluent from the so-called clear zone, through the effluent filter 16, and ultimately allows filtered effluent to pass through the outlet 12 of the septic tank and off to a nearby drainage field (not shown). The latter is preferably accomplished by means of an drainage pipe 20 connected to the ring-shaped outlet port 36 of the present tee baffle.

While schedule 40 pipe is typically used for drainage at the inlet and outlet ports of septic tanks, it is recognized that it may be desired to use thinner walled

pipe than schedule 40 pipes, such as SDR 35 pipe or ASTM 2729 pipe. Thus, to accommodate such thinner walled or other varying outside diameters of such different sized pipes, a cylindrical reducer bushing, denoted by reference
5 number 64, shown in FIG. 2, can be used in the ring-shaped inlet/outlet port 36 of the sanitary tee 10 in order to securely accommodate such smaller pipes. The reducer bushing 64 is preferably secured by means of a plastic weld sealant, again such as the PVC plastic pipe cement used to
10 bond the two mating halves of the tee to one another, as described above. On the other hand, the reducer bushing 64 is not used when the drainage pipe 20 comprises a larger diameter so-called schedule 40 pipe.

Once the two mating halves 38, 40 of the sanitary
15 tee 10 are secured to one another, the sanitary tee 10 serves as a rigid unitary member, operable in the manner that pipe fittings from the plumbing industry are conventionally used. However, the sanitary tee 10 of the present invention advantageously includes the integral
20 longitudinal extension, achieved by the elongated main body portion 24, which avoids having to cut a small length of separate pipe for the vertical portion of a conventional tee. The sanitary tee 10 of the present invention also reduces the need for extra molding material by utilizing
25 reinforced thinner walls, i.e. having a wall thickness significantly less than schedule 40 pipe along most of its length.

However, the present sanitary tee 10 still advantageously has a hub at its inlet or outlet port, with an internal diameter that is equal to the inner diameter of a schedule 40 sized hub. Further, the sanitary tee's walls are reinforced, i.e. by means of integral annular ribs 60, 62 provided about the exterior of the tee baffle, and longitudinal rib members 66 extend along each of the two longitudinal seams, all on the sanitary tee's exterior surfaces. As such, the exterior of the sanitary tee 10 is interrupted with these horizontal and vertical ribs. Nevertheless, the interior walls of the sanitary tee 10 are substantially smooth. The smoothness facilitates ease of insertion and/or removal of the effluent filter 16, 18, and avoids premature plugging of the pipe tee, as may otherwise be caused by the collection of grease, fats, oils, hair, lint and other floatables at rough surfaces or flash in a conventional pipe tee.

Another important advantage of the annular ribs 60, 62 and the longitudinal ribs 66 is that they not only provide the beneficial reinforcing function discussed above, but they also provide a molded-in runner system that, during injection molding of the tee baffle 10, helps distribute plastic along the tee baffle.

Although both the inner and outer surfaces of the elongated main body portion 24 of the sanitary tee 10 can be tapered inward in the vicinity of its lowermost end 22, this need not be the case. The elongated main body portion 24 of

the tee baffle 10 can instead have a uniform diameter. The lowermost end region can be advantageously coupled with a bell end of schedule 35 pipe, which pipe end can be glued in place to further extend the elongated main body portion 24 of the sanitary tee 10, if needed. Alternatively, a straight coupler fitting can be solvent-welded to the lower end region of the tee baffle, and any desired length of straight schedule 35 pipe could be solvent welded into the other end of the coupler fitting in order to increase the present tee 10 to the desired length. Also, the upper lid-receiving end 30 of the sanitary tee 10 is purposely open in order to provide access to an effluent filter 16, 18 housed within the sanitary tee, i.e. to facilitate its removal for cleaning, replacement, re-insertion, or other maintenance purposes. If desired, the upper hub 30 can be closed off with a standard pipe end plug (not shown).

Importantly, the inner wall of the present sanitary tee 10 can be provided with means for securing various types of single-pass effluent filters 18 within the tee, assuming such effluent filters have a circular profile that fits within the sanitary tee 10. That is, most effluent filters are provided with their own sealing gaskets or flanges, however many conventional gaskets have been found to be inadequate to prevent the premature upward movement of the effluent filter within a conventionally formed tee. As described above, such unwanted upward movement, or "popping up" of the effluent filter, can be

caused by grease, fats, oils, dirt and biological growth plugging the interior of a conventional tee, which results in a pressure differential between the septic tank and the interior level of effluent in the tee, thereby forcing up
5 the filter element.

The present invention sanitary tee 10 thus assists in resisting premature upward movement or ejection of the effluent filter. This is accomplished by providing inwardly directed flanges or projections along the tee's inner wall
10 in the vicinity of the upper lid-receiving end 30 of the tee, just above a ridge formed in the tee over the top of the sweep opening at the outlet of the tee, where the tee widens to accept the lid 26 of an effluent filter. For example, securement means in the form of inwardly-directed
15 raised buttons or ribs 68 would be provided on the inner wall of the hub of the tee. Preferably, these buttons 68 are located at approximately 20 and 200 (with the center of the outlet opening being at a 90 location relative to the opening at the top of the upper lid-receiving end 30).

20 The cap 26 of the effluent filter 18 then would advantageously be provided with complementary recesses or openings to allow the cap 26 to pass over the buttons 68 or ribs during insertion or removal of the effluent filter. Then, in a bayonet fitting-type operation, once the cap of
25 the effluent filter passes the ribs or buttons, the effluent filter is rotated to a secured position, so that the ribs or buttons lock the cap of the effluent filter in place on the

ridge at the lower end of the hub of the tee, where the slanted ridge is provided.

An additional means for securing certain types of effluent filters within the tee 10 is to provide inwardly-directed elements 68 on the smooth inner wall of the tee, such as in the form of rims 70 that are undercuts of the elements 68, which facilitate locking the sealing gasket of the effluent filter in place against the sanitary tee 10. For example, one commercially available single-pass effluent filter 18, as shown in FIG. 7, wherein the effluent only passes through filtering slits once, has a flexible sealing gasket 74 located near a lower end of the filter.

Advantageously, the present invention provides a way to reinforce the retaining contact between the sealing gasket 74 and the inner wall of the present sanitary tee 10, by providing such inwardly-directed elements 70 with flat rims 72 on their underside. The rims 72 are preferably located near the bottom of the pipe tee, i.e. on the inner wall of the inwardly-tapered and reduced diameter lowermost end 22 of the pipe tee.

When the sanitary tee 10 of the present invention is manufactured by injection molding, the desired rims can be created by using injector pins that have been reduced in size at their ends to intentionally leave a sufficient amount of inwardly-directed excess material at desired locations along the inner wall of the tee. As shown in FIG. 7, the resultant flat rims 72 created at the bottom of these

excess material elements, when the injector pins are removed, advantageously create locking surfaces against which the sealing gasket 74 of the single-pass effluent filter 18 can be biased, i.e. get caught on, once the effluent filter 18 is fully inserted into the tee. In fact, an audible snap can be detected when the sealing gasket 74 passes over the elements 70 and engages against the rims 72, as the sealing gasket 74 briefly loses, and then reacquires, fully extending sealed engagement with the inner wall of the tee. This audible snap informs the installer that the single-pass effluent filter 18 is then fully inserted into the tee. While the elements 70 are preferably semi-circular or half-moon shaped, it is recognized that similar sealing engagement with the sealing gasket 74 can be accomplished with short annular rib segments 70a, as shown in FIG. 8, or with long annular rib segments 70b, as shown in FIG. 9, or various other shapes.

Another beneficial feature of the present invention is the improved ability to prevent the effluent filter 16 from popping up and out of the tee baffle 10. As shown in FIGS. 10 and 11, this is accomplished by additional flanges or locking lugs 76, 78 provided on the interior surface of the elongated main body 24 of the tee baffle 10, located just above the tapered rim 28. Corresponding lug-receiving apertures 77, 79 are provided in the cap 26 of the effluent filter 16. Thus, by aligning the lug-receiving apertures 77, 79 of the effluent filter 16 with the

corresponding locking lugs 76, 78 near the tapered rim 28 of the tee baffle 10, inserting the effluent filter 16 into position so that the cap 26 rests on the tapered rim 28, and then rotating the effluent filter 16 using the handle 32 until the locking lugs 76, 78 are out of alignment with the lug-receiving apertures 77, 79, the effluent filter 16 will be prevented from popping out of the tee baffle 10 under the forces that may be exerted by a build-up of pressure underneath the effluent filter 10.

Turning now to FIGS. 12-14, the inventor's most preferred embodiment of the present invention is to have the tee baffle molded as a single piece, while still maintaining the attributes of the thin-walled two piece tee, and still accomplishing the effectiveness of that two-piece tee over a conventional prior art tee when used in septic and other on-site waste disposal settings, with or without an effluent filter housed within the tee. Specifically, in FIGS. 12-14, a one piece tee 110 is provided, having an elongated main body portion 124. A plurality of integral annular strengthening ribs 160 are provided along the length of the elongated main body portion 124. The broken-open depiction of the tee 110 in FIG. 14 is merely for illustrative purposes, with the cross-hatching along the length of the tee baffle 110 demonstrating a hypothetical vertical cut along the length of the one-piece tee baffle 110 so that the smooth, uniform diameter interior surface of the tee baffle 110 can be readily seen.

The one-piece tee baffle 110 may be in the form of a sanitary tee, having an arching sweep portion 134 which terminates in an inlet/outlet opening 136. This inlet/outlet opening 136 can receive a reducer bushing 164.

5 Since the tee baffle 110 is formed as a single part, there are no seams. However, because of the thin-walled construction, also on the order of between 0.075" and 0.100", most preferably about 0.090", it is beneficial to provide longitudinal strengthening ribs 147 along the
10 vertical axis of the tee baffle 110. At a lower end of the elongated main body portion 124, there are a plurality of annular strengthening ribs 180 in the vicinity a hub-receiving end 122. Advantageously, the one piece tee baffle 110 maintains a thin wall profile over most of its area,
15 substantially reducing manufacturing costs as compared with conventional prior art tees, while still exhibiting sufficient rigidity and strength, by virtue of the vertical ribs and annular ribs 160, 180. As in the two piece tee baffle, locking elements or tabs 170 may be provided within
20 the elongated main body 124 to sealingly engage an annular gasket of a single pass effluent filter.

The vertical ribs 160 of the one-piece tee 110 (as well as the longitudinal ribs 66 in the two-piece tee 10) are preferably located at 180 to one another, but it is
25 recognized that this need not be the case, and instead, for example, there may be three such ribs provided at 60 intervals between one another. The vertical ribs 160 of the

one-piece tee 110 also perform the same molded-in runner system benefit of the longitudinal ribs 66, by helping to distribute plastic along the tee 110 during injection molding.

5 While the present invention has been described with respect to certain embodiments thereof, it is not intended to be limited thereto. It will be understood by those of ordinary skill in the art that variations on the embodiments discussed herein can be made that are still
10 within the literal scope of, or are considered equivalents of, the appended claims.

CLAIMS

I claim:

~~A~~ tee baffle comprising:

an elongated generally cylindrical main body portion
5 defining a tubular opening;

a cylindrical uppermost hub coaxial with said elongated
main body portion and having an inner diameter greater than
said diameter of the elongated main body portion;

an inlet/outlet port;

10 a first rib extending generally longitudinally along
said elongated main body portion; and

a second rib extending generally longitudinally along
said elongated main body portion.

15 2. The tee of claim 1, wherein said first and second ribs
extend outwardly from an outer wall of the elongated main
body portion and said uppermost hub.

3. The tee of claim 2, further including seams coextending
20 with said first and second ribs.

4. The tee of claim 1, further including a sweep portion
arcing upwardly from said elongated main body portion toward
a ring defining an outlet opening, said sweep portion
25 defining an opening in communication with said tubular
opening and said outlet opening.

5. The tee of claim 3, further comprising at least one horizontal reinforcement rib on said outer wall of the elongated main body portion.

6. The tee of claim 1, in combination with a reducer bushing securely received in said inlet/outlet port.

7. A tee for use at the inlet or outlet of a septic tank, said tee comprising:

10 a generally r-shaped first mating half having
an elongated main body portion that is generally
U-shaped in cross-section,
a lowermost end integral with said elongated main
body portion, said lowermost end having a smaller radius
15 than the elongated main body portion,
a half-ring shaped upper lid-receiving end having
a larger radius than said elongated main body portion,
a sweeping extension integral with said elongated
main body portion and terminating at a half-ring shaped
20 inlet/outlet,

a first mating edge running lengthwise along said
lowermost end, said elongated main body portion, and said
upper lid-receiving end, said first mating edge being
located opposite said sweeping extension,

25 a second mating edge running along said lowermost
end, said elongated main body portion, an underside of said

sweeping extension portion, and a bottom of said half-ring shaped inlet/outlet,

a third mating edge running along said upper lid-receiving end, an upper side of said sweeping extension portion, and a top of said half-ring shaped outlet,

a generally r-shaped second mating half complementing the generally r-shaped first mating half, said generally r-shaped second mating half having

an elongated main body portion that is generally U-shaped in cross-section,

a lowermost end integral with said elongated main body portion, said lowermost end having a smaller radius than the elongated main body portion,

a half-ring shaped upper lid-receiving end having a larger radius than said elongated main body portion,

a sweeping extension integral with said elongated main body portion and terminating at a half-ring shaped inlet/outlet,

a fourth mating edge running lengthwise along said lowermost end, said elongated main body portion, and said upper lid-receiving end, said fourth mating edge being located opposite said sweeping extension,

a fifth mating edge running along said lowermost end, said elongated main body portion, an underside of said sweeping extension portion, and a bottom of said half-ring shaped inlet/outlet, and

a sixth mating edge running along said upper lid-receiving end, an upper side of said sweeping extension portion, and a top of said half-ring shaped inlet/outlet.

5 8. The tee of claim 7, further comprising:

a first groove extending along a substantial portion of said first mating edge;

a second groove extending along a substantial portion of said second mating edge;

10 a third groove extending along a substantial portion of said third mating edge;

a first tongue projecting perpendicularly from said fourth mating surface and extending along a substantial portion of the fourth mating surface, said first tongue

15 being received in said first groove;

a second tongue projecting perpendicularly from said fifth mating surface and extending along a substantial portion of said fifth mating surface, said second tongue being received in said second groove; and

20 a third tongue projecting perpendicularly from said sixth mating surface and extending along a substantial portion of said sixth mating surface, said third tongue being received in said third groove.

25 9. The tee of claim 8, wherein each of said mating edges includes:

a flat flange extending outwardly of each of said grooves and tongues, said flat flange providing a bonding surface to reinforce securement of said generally r-shaped first and second mating halves.

5

10. The sanitary tee of claim 7, in combination with an effluent filter having a generally cylindrical profile, said effluent filter having a lid received in said upper lid-receiving ends.

10

11. The combination of claim 10, wherein said effluent filter includes a sealing gasket engaged with an inner wall of said lowermost ends of the sanitary tee, and wherein said inner wall of the lowermost ends of the sanitary tee include elements having locking rims to engage an outermost lip of said sealing gasket.

15

12. The combination of claim 10, wherein at least one of said half-ring shaped upper lid-receiving ends further includes an inwardly directed locking flange, said at least one locking flange being spaced a distance of at least a thickness of said lid of the effluent filter, and the lid of the effluent filter including a complementary recess to allow for insertion of said lid past said locking flange, whereby upon rotation of the effluent filter subsequent to insertion past the locking flange, said recess is out of

20

25

alignment with said locking flange, and said locking flange prevents vertical movement of said effluent filter.

13. The combination of claim 10, in further combination
5 with a length of schedule 40 pipe received in said inlet/outlet opening.

14. The sanitary tee of claim 7, in combination with a
10 length of pipe received in said inlet/outlet opening.

15. A one-piece sanitary tee baffle comprising:

an elongated generally cylindrical main body portion defining a tubular opening;

15 a cylindrical uppermost hub coaxial with said elongated main body portion and having an inner diameter greater than said diameter of the elongated main body portion;

an inlet/outlet port;

20 a first rib extending generally longitudinally along said elongated main body portion; and

a second rib extending generally longitudinally along said elongated main body portion, said elongated generally cylindrical main body portion having a wall thickness between 0.075" and 0.100" over a substantial portion
25 thereof, most preferably about 0.090".

16. The one-piece sanitary tee baffle of claim 15, in combination with an effluent filter received in the tubular opening thereof.

5 17. The one-piece sanitary tee baffle of claim 15, in combination with a length of pipe received in said inlet/outlet port.

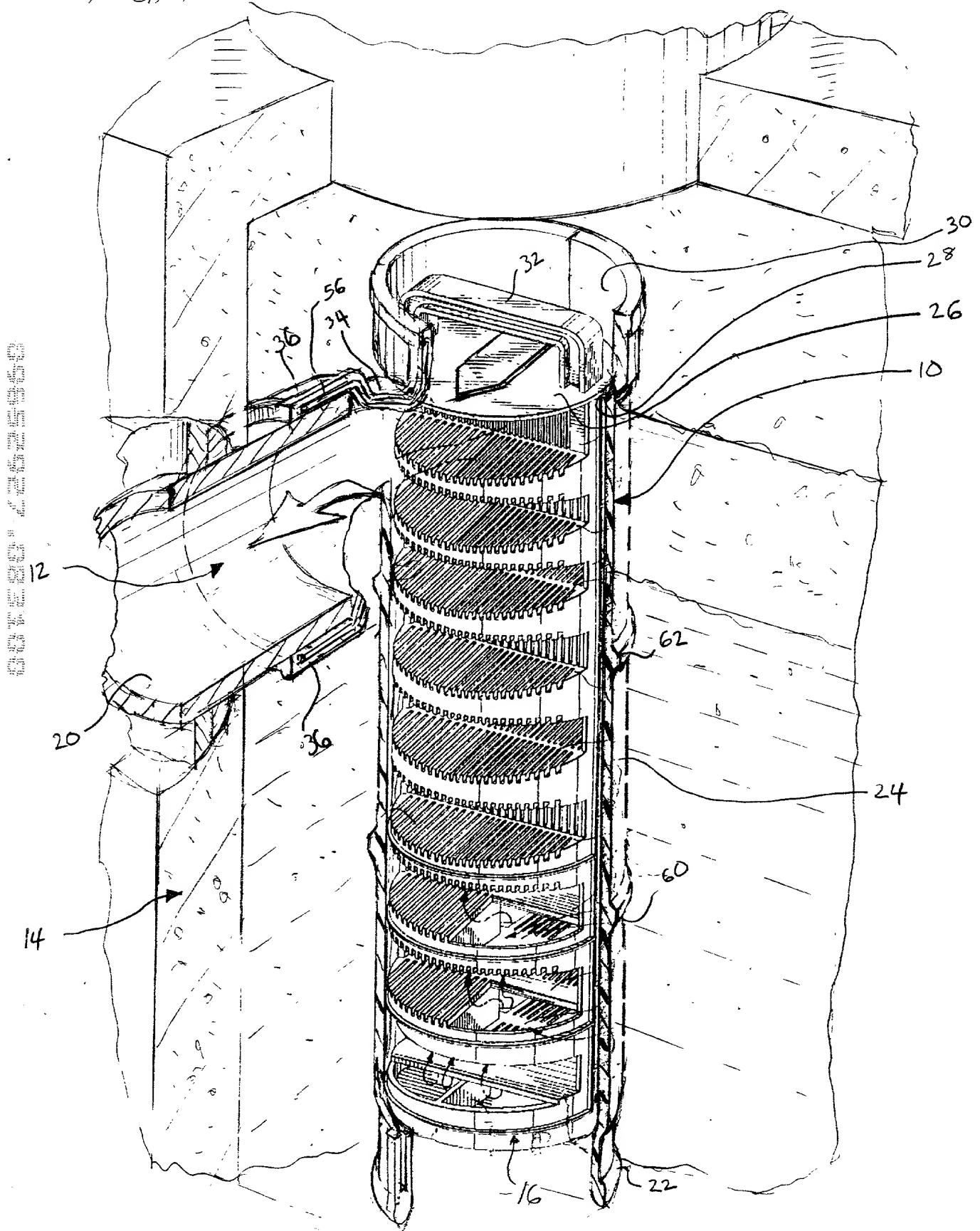
10 18. The combination of claim 17, further comprising a reducer bushing between said inlet/outlet port and said length of pipe received therein.

ABSTRACT

A tee baffle for use at the inlet or outlet of a septic tank or other on-site waste drainage system has a thin-walled profile and is provided with ribs along its longitudinal axis and one or more annular ribs. The tee baffle has a lowermost end for accommodating the bell end or hub of a length of pipe to facilitate lengthening the tee to the desired dimension. The tee baffle can accommodate various sizes and types of effluent filters having generally cylindrical profiles, and may be provided with inwardly-directed flanges, tabs, or ribs to hold effluent filters in place and prevent an effluent filter from becoming dislodged from the tee baffle.

FIG. 1

1/5



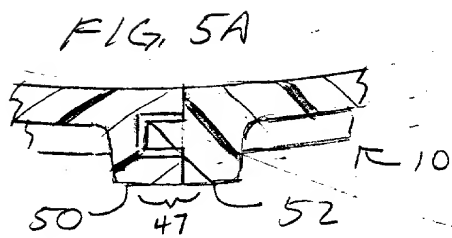
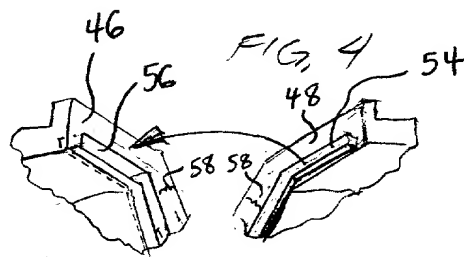
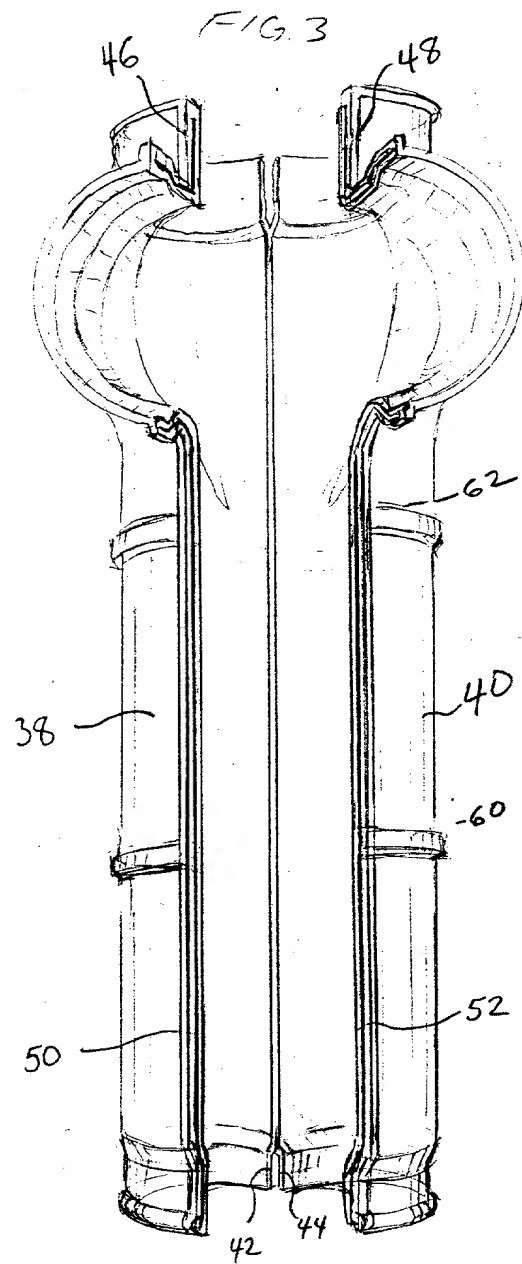
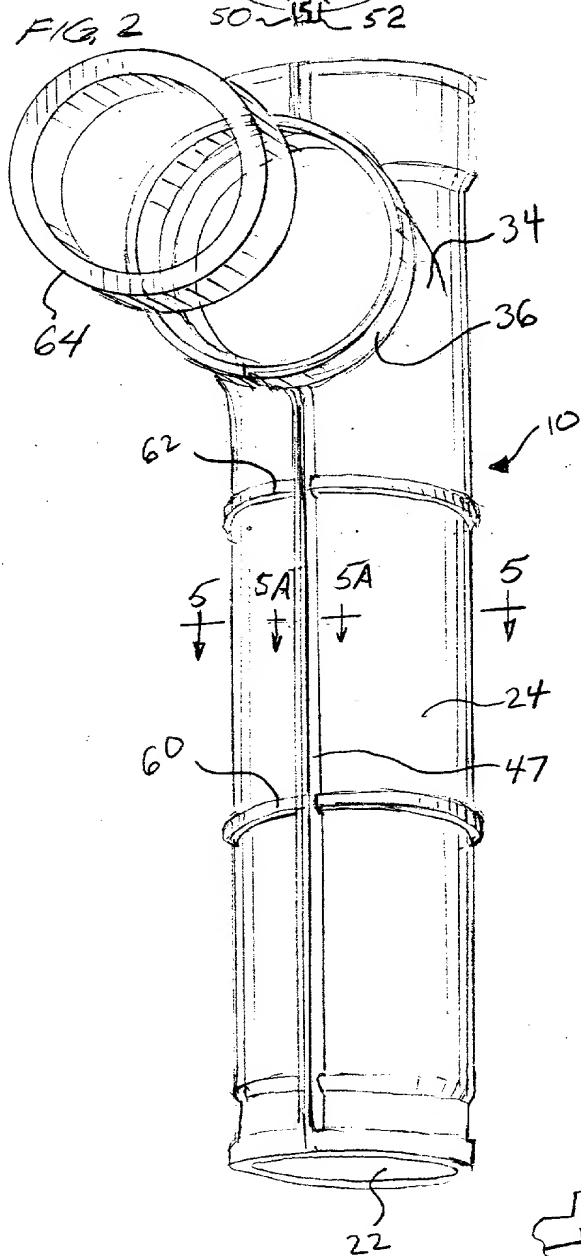
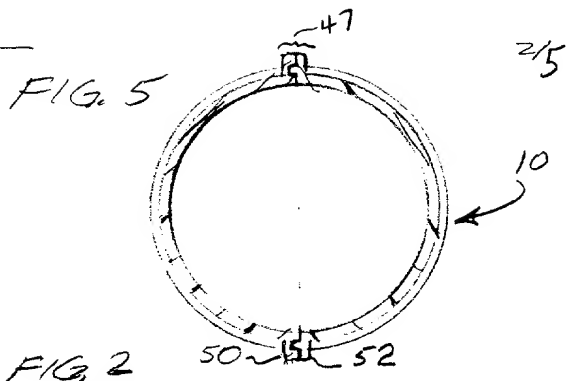


FIG. 13

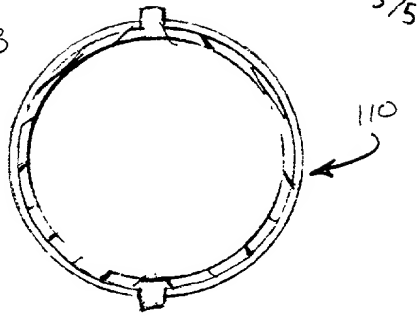


FIG. 12

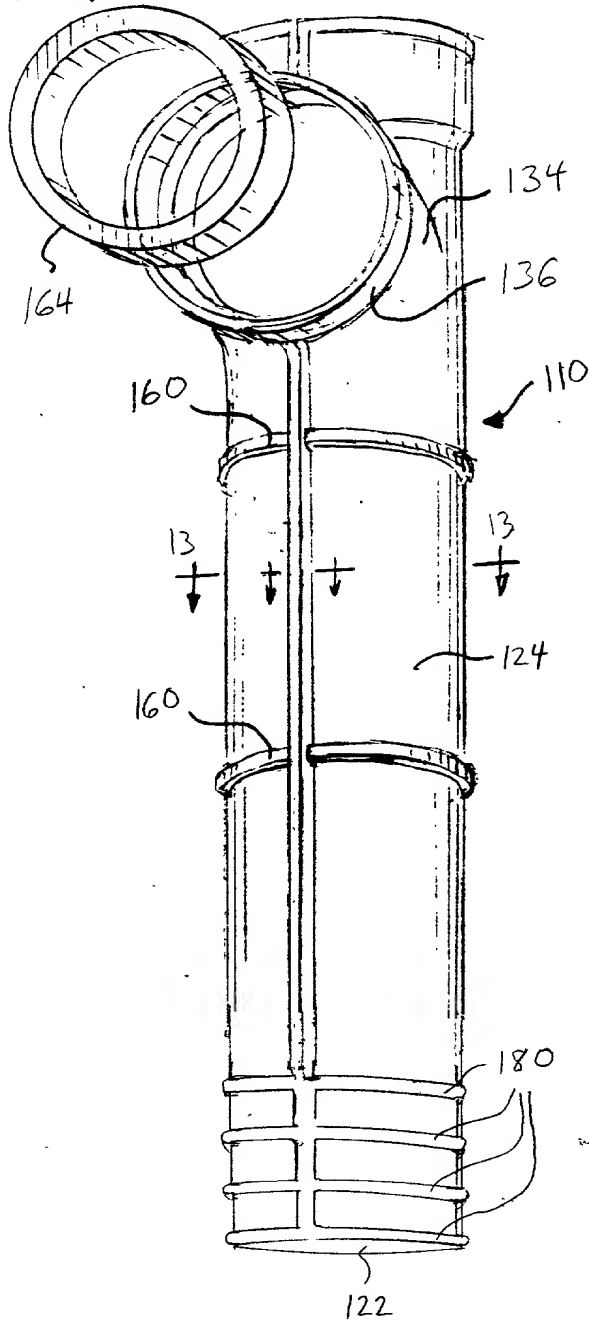


FIG. 14

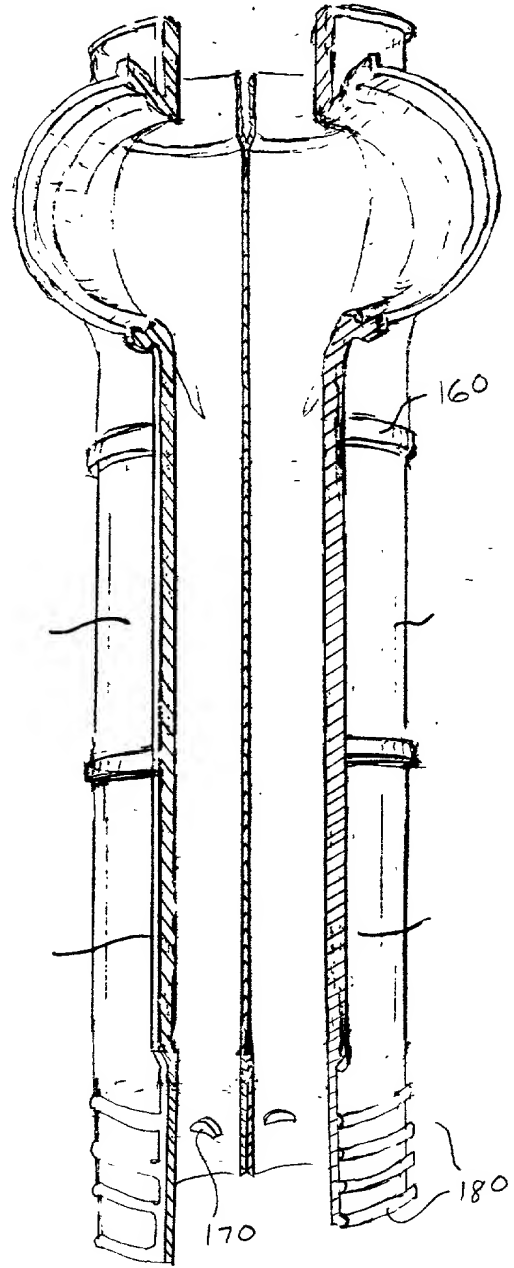


FIG. 7

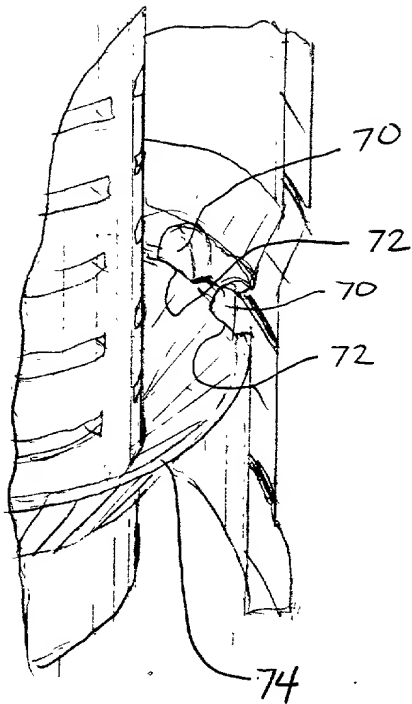


FIG. 8

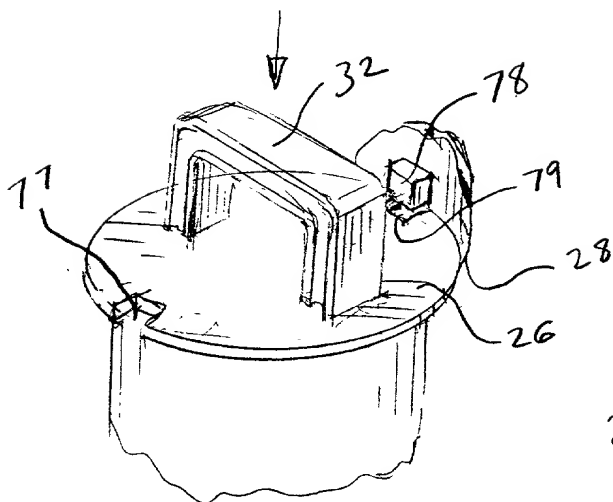
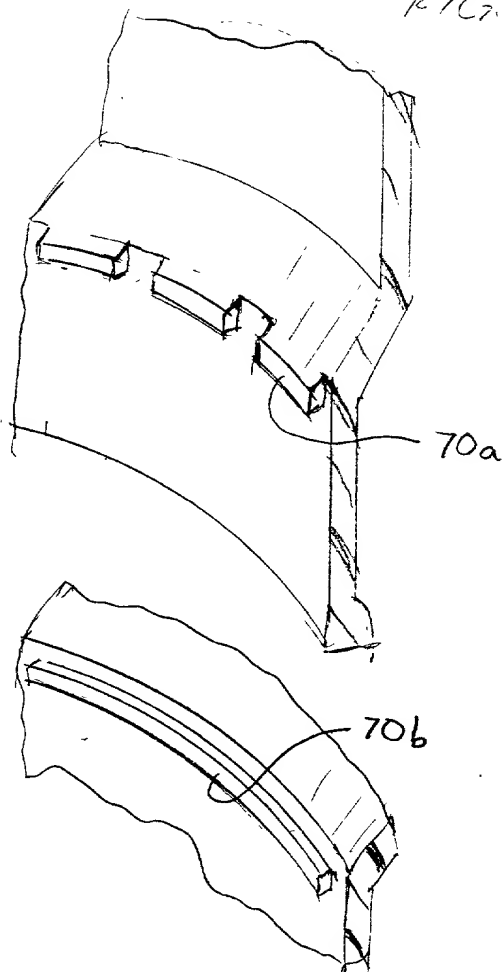


FIG. 10

FIG. 9

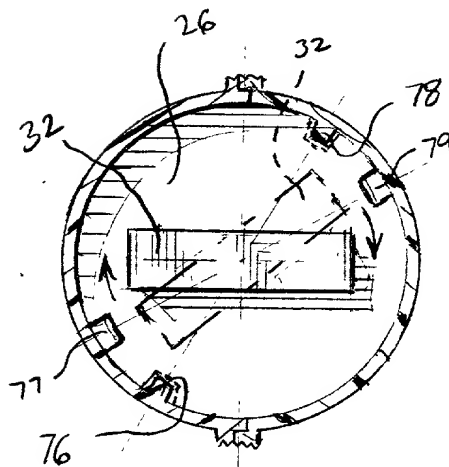


FIG. 11

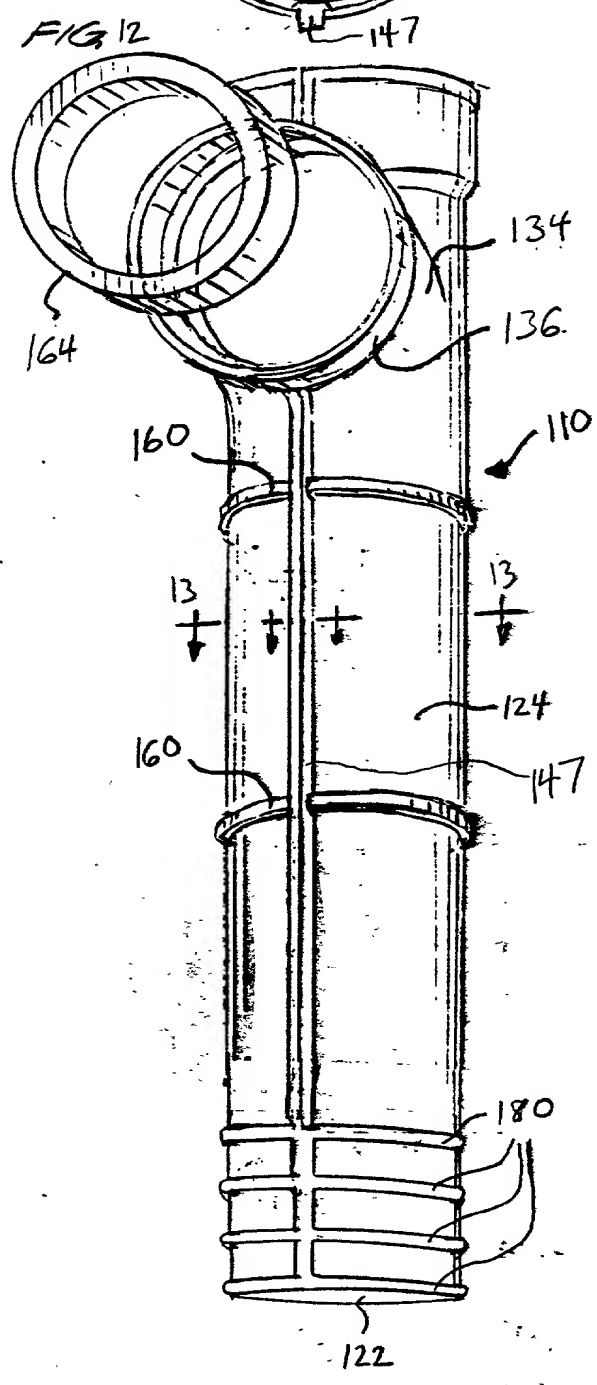
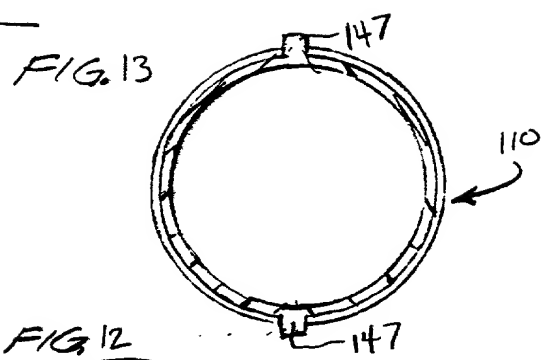
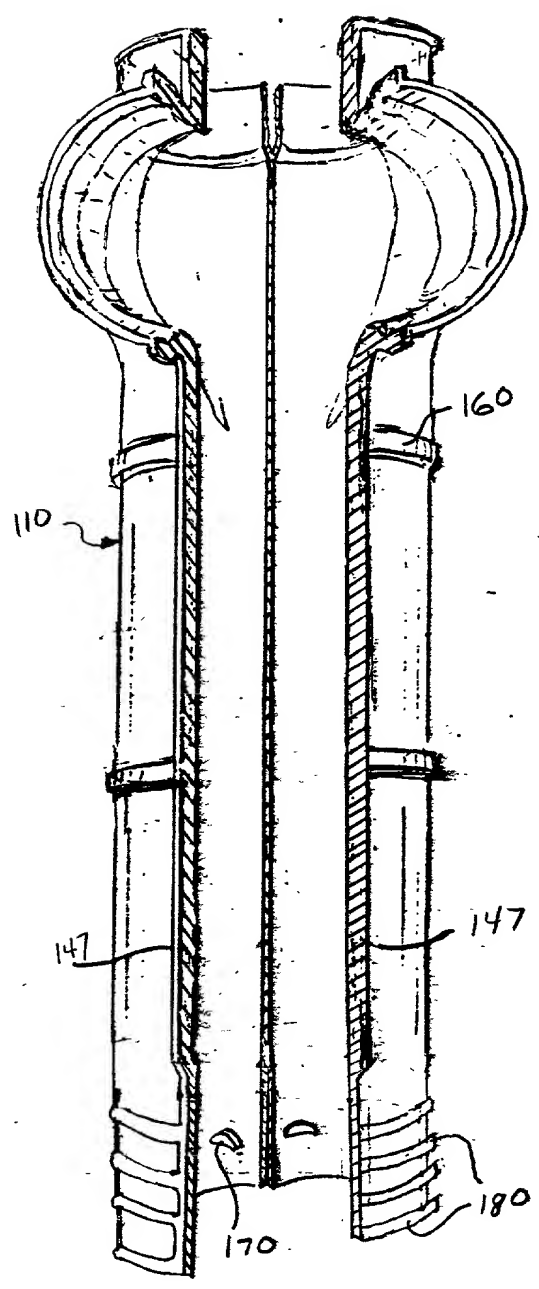


FIG. 14



DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**TEE BAFFLE FOR USE AT INLET OR OUTLET OF
SEPTIC AND OTHER ON-SITE WASTE DISPOSAL SYSTEMS**

the specification of which:

 X is attached hereto

 was filed on _____
Application Serial No. _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a) (a copy of which is attached).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

			PRIORITY CLAIMED
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	____ YES ____ NO
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	PRIORITY CLAIMED
			____ YES ____ NO

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the

prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the natural or PCT International filing date of this application:

(Appl'n Serial No.)	(Filing Date)	(Status)
		(Patented, Pending, Abandoned)
(Appl'n Serial No.)	(Filing Date)	(Status)
		(Patented, Pending, Abandoned)

POWER OF ATTORNEY: As named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

John B. Lungmus (Reg. No. 18,566), John W. Chestnut (Reg. No. 24,096), Richard B. Hoffman (Reg. No. 26,910), Vasilios D. Dossas (Reg. No. 30,745), and Jeremy R. Kriegel (Reg. No. 39,257), all of 100 South Wacker Drive, Chicago, Illinois 60606.

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Richard B. Hoffman
TILTON, FALLON, LUNG MUS & CHESTNUT
100 South Wacker Drive, Ste. 960
Chicago, Illinois 60606-4002

Richard B. Hoffman
(312) 456-8000

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of First Inventor: Theodore W. Meyers

Inventor's
Signature: Theodore W. Meyers Date: 8-29-00

Residence: 80 Waterview Court, Barrington, IL 60010

Post Office Address: same

Citizenship: U.S.

§1.56 Duty to Disclose Information Material to Patentability

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine.

(1) prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this specification are:

(1) Each inventor named in the application;

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.